Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5

Confidential

Sub-Saharan Africa: Prospects for Recovery from Drought

Confidential

ER RP 75-11

March 1975

Copy No 3

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5

NATIONAL SECURITY INFORMATION
Unauthorized Disclosure Subject to Criminal Sanctions

Classified by 015319
Exempt from General Declassification Schedule
of E.O. 11652, exemption category:
§ 5B(1), (2), and (3)
Automatically declassified on:
date impossible to determine

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

SUB-SAHARAN AFRICA: PROSPECTS FOR RECOVERY FROM DROUGHT

KEY JUDGMENTS

- Good rains last summer at least temporarily broke the long drought in most of Sahelian Africa.
- The October harvests were short of requirements for 1975, but the food deficits to be filled by foreign donations are estimated at only about half of the 700,000 metric tons granted during November 1973 - October 1974.
- The drought's major economic toll was against the livestock herds, cutting exports of beef cattle and local barter of livestock products for cereals.
- Reduced cattle exports from the Sahelian states will cause sharp increases in beef prices in coastal African cities, such as Abidjan, Dakar, and Accra.
- The realization of a tentatively forecast long-term decline in precipitation would severely limit long-term Sahelian developmental prospects.
- Even if weather is good, the Sahel's poor physical resources limit prospects for making the area agriculturally productive.
- There are significant planning and financing deficiencies that impede efforts to accelerate development, as well as a lack of enthusiasm in some governmental circles toward improving the welfare of the herding tribes.
- Institutional shortcomings will tend to stimulate a recurrence of the cycle of overgrazing and consequent extreme drought vulnerability.
- Significant improvements in Sahelian living conditions during this decade are improbable.

25X1A

Note: Comments and queries regarding this publication are welcomed. They may be directed to [redacted] of the Office of Economic Research, Code 143, Extension 5741.

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

DISCUSSION

Introduction

1. Six of the world's poorest countries bore the brunt of the African drought -- Senegal, Mauritania, Mali, Upper Volta, Niger, and Chad[1] (see the map). Even before the drought, these states shared low growth rates and per capita incomes, widespread malnutrition, persistent trade deficits, and other of the impoverishing characteristics that distinguish the most disadvantaged of developing countries.[2] None had natural resources on a scale sufficient to nourish prospects for achieving healthy development in this decade.

2. The barren Sahara Desert blankets more than half of the areas of four of the countries -- Mauritania, Mali, Niger, and Chad. The first fringe of land south of the Sahara, called the Sahel, is barely more habitable, receiving only 10-20 inches of rainfall annually during June-September. The Sahel encompasses about one-fifth of the combined areas of the six countries. Mauritania and Niger have almost no area south of the Sahel, and livestock diseases spread by the tsetse fly limit the usefulness of the sub-Sahelian southern areas in the other four states.

3. Despite the forbidding environment, farming and herding support more than 90% of the six countries' 25 million people. Except in Mauritania, most of the populations consist of farmers living in the south of the countries, where rainfall normally is just sufficient to grow sorghum, millet, and vegetables for family needs and some local marketing. Cultivation in the Sahel takes place mainly along the Niger and Senegal Rivers and the tributaries of Lake Chad. Livestock raising centered in the Sahel contributes all or most of the livelihood of about 25% of the six countries' combined populations (about 75% of Mauritania's). The extremely variable weather induces the herders to move most of their livestock in migratory patterns, leaving the sparse northern pastures at the end of the wet seasons for more bountiful pastures and harvested farm lands in the south, and returning as the wet seasons recur.

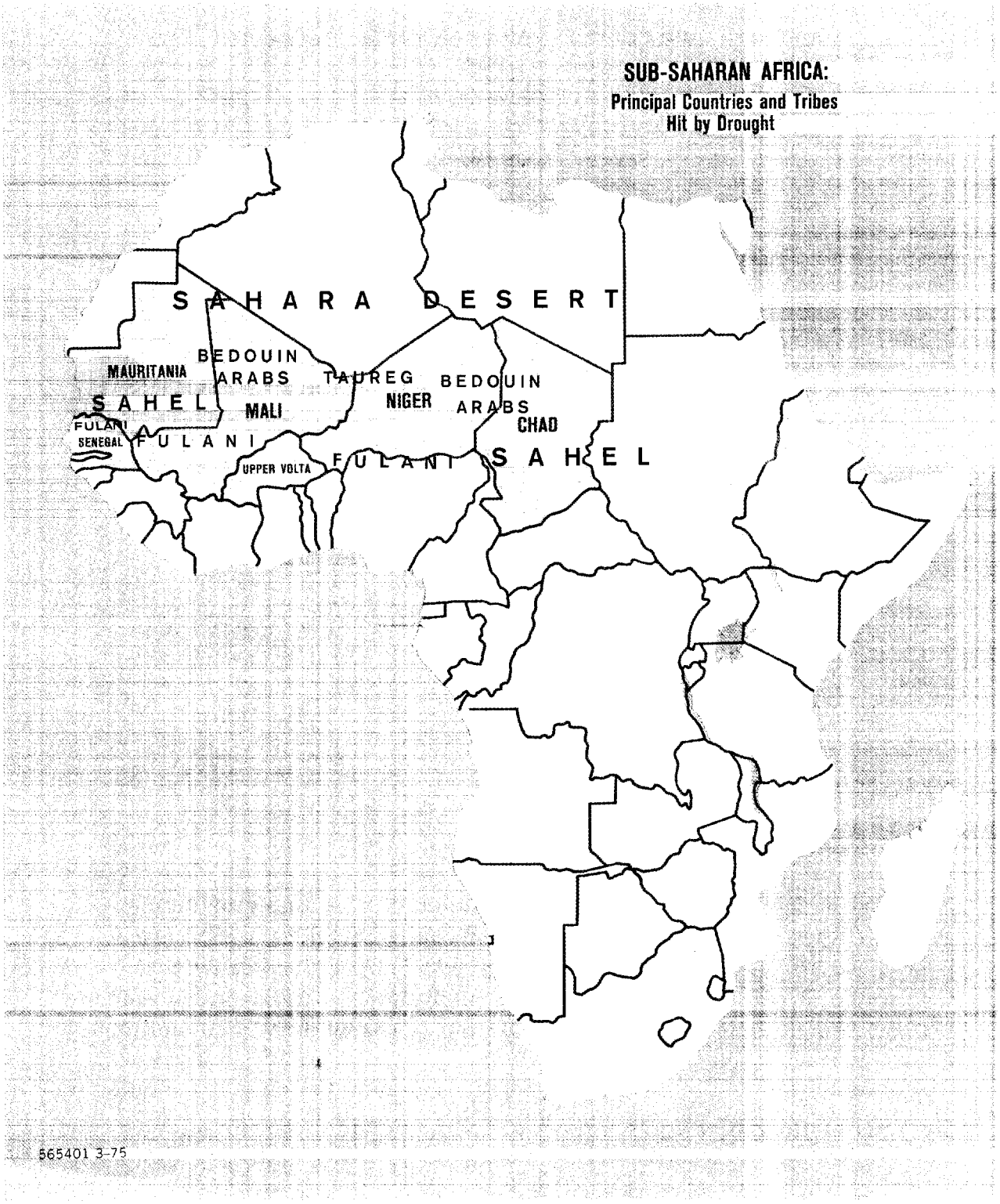
4. The practices of farming and herding are divided roughly along ethnic lines. Tauregs of Berber ancestry and Fulani tribes carry on most of the migratory herding in the Sahel. Bedouin Arabs herd mainly sheep, goats, and camels in the

1. Drought also was severe in a number of Ethiopian provinces. Other countries touched by the African drought include Gambia, Guinea, Dahomey, Nigeria, Cameroon, Central African Republic, Sudan, Uganda, Tanzania, Kenya, and Somalia.

2. Available economic statistics for the six countries are given in Table 1.

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL



Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

Table 1

Sub-Saharan Africa: Economic Statistics of Six Sahelian Countries[1]

	Senegal	Mauritania	Mali	Upper Volta	Niger	Chad
Gross domestic product (million US $, current prices)	1,000	230	380	325	400	300
Population (thousand persons)	4,258	1,304	5,560	5,888	4,444	3,988
Population dependent on agriculture (percent)	80	98	98	95	98	90
Per capita GDP (US $)	240	190	70	60	100	80
Area (thousand square miles)	76	419	465	106	489	496
Under cultivation (percent)	12	1	1	10	3	10
Population density (persons per square mile)	56	3	12	55	9	8
Population growth (percent)	2	2	2	2	2	2
Adult literacy rate (percent)	5-10	5-10	0-5	5-10	0-5	5-10
Exports (million US $)	215	100	30	25	55	40
Major commodities (percent of total exports)						
Groundnuts	35-40	Negl.	10-15	5-10	45-50	0
Cotton	0	0	15-20	25-30	Negl.	45-50
Minerals	10-15	70-75	0	0	10-15	Negl.
Livestock	Negl.	10-15	45-50	55-60	30-35	45-50
Fish	5-10	5-10	5-10	0	Negl.	Negl.
Imports (million US $)	280	70	60	70	65	65
Foreign exchange reserves at yearend (million US $)	20-40	10-20	0-5	40-60	30-50	0-5
Foreign debt (million US $)[2]	345	80	325	30	40	30

1. All data are the most recent available.
2. Debt with a maturity of over one year.

Sahel and in Saharan oases. The Fulani and tribes that are largely of Negroid ancestry (Dogon, Songhai, and others) practice semimigratory herding and sedentary farming and herding in the south of the states, both inside and outside the Sahel. Considerable ill will has existed between the largely Muslim Sahelian herders and Christian-Animist southerners as a result of depredations by the warlike herders in past generations.

Six Years of Drought, 1968-73

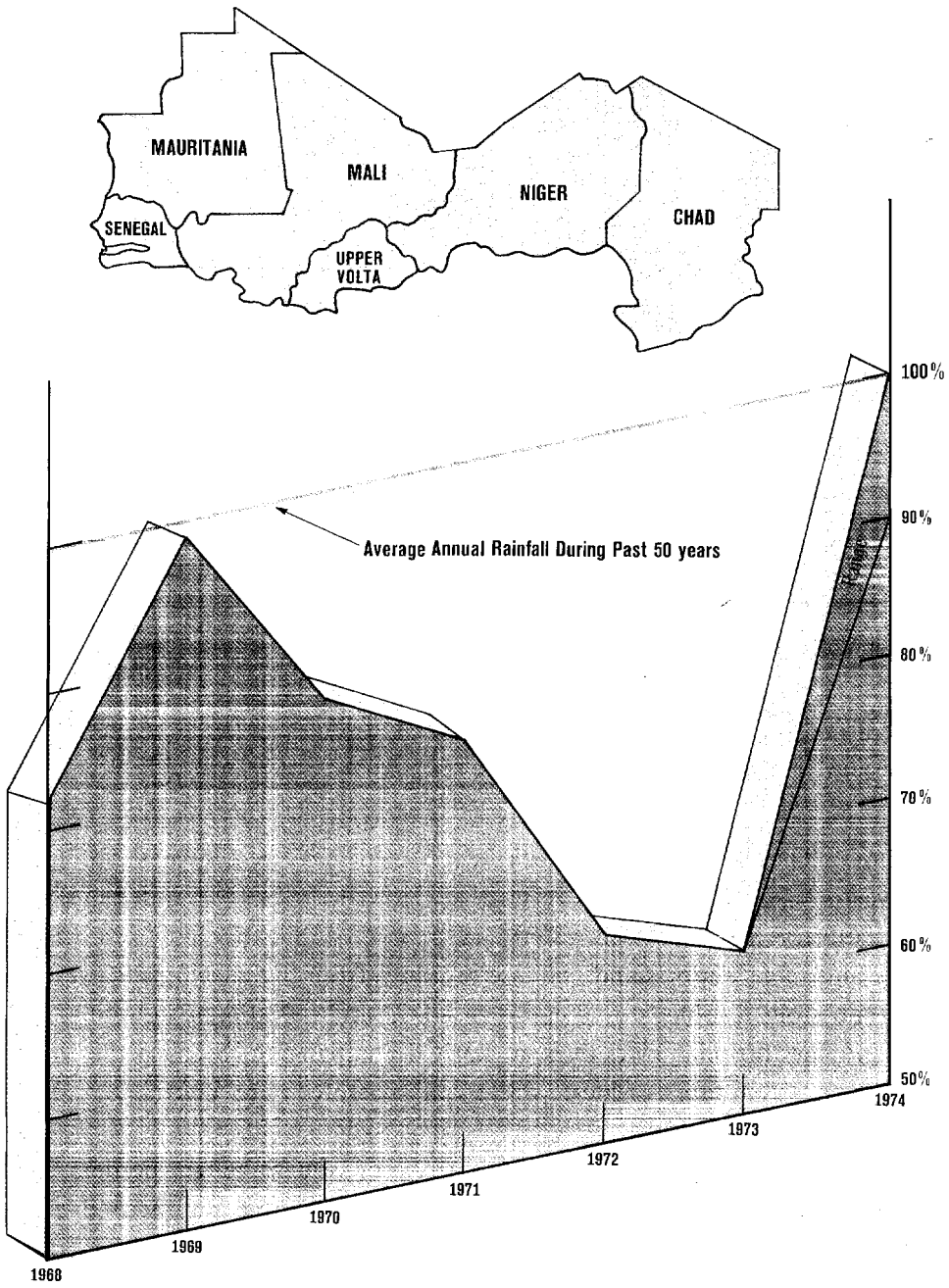
5. Rainfall was below average in 1968, and fell in successive years after 1969 to a low of less than two-thirds of normal in 1973 (see the chart). Always

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

SUB-SAHARAN AFRICA:

Average Rainfall in Six Sahelian Countries



565402 3-75

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

susceptible to drought, the Sahelian herding economy (the Tauregs, Fulani, and Bedouin Arabs and, to a lesser extent, the farmer/herders in the southern Sahel) suffered the most immediate and severe damage. Water wells both for human and animal consumption dried up and pastures for livestock were quickly consumed. River flooding, depended on for subirrigation of the Sahelian grain crops, failed in 1972 and 1973. Cereal production in the six countries may have been cut by as much as one-third compared with average production before the drought (see Table 2).

Table 2

Sub-Saharan Africa: Estimated Sorghum and Millet Production by Six Sahelian Countries[1]

Thousand Metric Tons

	Annual Average Predrought	1969	1970	1971	1972	1973	1974
Total	**4,300-4,925**	**N.A.**	**3,775**	**N.A.**	**3,065**	**3,210**	**N.A.**
Senegal	600-700	635	410	585	325	510	650
Mauritania	100-125	N.A.	80	N.A.	35	25	N.A.
Mali	800-1,000	700	715	750	500	675	N.A.
Upper Volta	1,000-1,100	1,000	860	945	740	720	1,000
Niger	1,200-1,300	1,385	1,100	1,225	1,050	900	N.A.
Chad	600-700	650	610	600	415	380	N.A.

1. Numbers represent rough estimates and are rounded to the nearest 5,000 tons.

6. The Sahel's vulnerability to drought had been increased by overstocking of livestock and consequent overgrazing prior to 1968. After independence in 1960, each country had increased veterinary services and expanded well drilling to spur cattle and meat exports and increase revenues from livestock head-taxes. As a result, herds possibly doubled to as many as 50-60 million animals[3] (see Table 3). There were no institutional incentives to limit the expansion, because the livestock were grazed on open ranges where water and pasture were held in common.

7. Traditional husbandry practices of the Sahelian herders abetted the governmental initiatives. Livestock ownership had long represented a measure of family wealth; therefore, unlimited accumulation of animals was a common goal. Livestock's value stemmed from the herders' almost total dependence for food on (1) milk from the herds and (2) cereals acquired by bartering milk and milk

3. Statistical data on the Sahelian economies and on the impact of the drought are sparse and unreliable. Most data in this publication indicate estimated orders of magnitude.

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

Sub-Saharan Africa: The Niger River could be crossed on foot at Niamey during the worst of the 1968-73 drought.

Table 3

Sub-Saharan Africa: Estimated Livestock Population of Six Sahelian Countries, 1968

Thousand Head

	Cattle	Sheep and Goats	Horses	Camels
Total	**18,500**	**29,000**	**1,800**	**1,530**
Senegal	2,000	2,000	200	30
Mauritania	2,000	4,000	200	500
Mali	4,500	9,000	500	250
Upper Volta	2,000	3,000	200	10
Niger	4,000	8,000	400	390
Chad	4,000	3,000	300	350

products and selling male and barren cattle. No alternative opportunities for accumulating wealth, such as would be provided by savings institutions and a tradition of currency-based commerce, existed.

8. The severe environment and poor husbandry practices had kept the herds in poor condition before the drought began. The migratory herding routes between the widely dispersed wet and dry season pastures had enforced repeated and tiring livestock drives to maintain the animals' minimal nutritional needs. Competition by herders for brood cows' milk for family and trading needs weakened calves. Local customs that favored older brood stock of proved fertility over young animals had led to the overstocking of aged animals.

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

9. The drought forced the herders to accelerate sales of their livestock to reduce the herds to a level the pasture would support and to earn the wherewithal to buy cereals for their own needs. Village granary supplies dwindled as grain crops were reduced. The ensuing hardship, starvation, and disease took a great many lives, particularly from the poorest families (those without livestock to milk or barter) and the more susceptible family elements (infants, children, and aged persons).[4] Indifference in some of the countries because of the old animosities toward the Sahelian herders and some resignation in the face of drought in others delayed official recognition of the magnitude of the disaster and governmental initiation of aid.

10. A multidonor emergency food-aid effort was begun in the fall of 1972. Since that time, more than 1.2 million tons of grain and other foods have been donated (see Table 4). Difficulties in delivering supplies, because of inadequate transportation, inefficient local administration in some countries, and poor information on where the need was greatest, prolonged the hardship of many. The aid effort, nevertheless, averted mass starvation and perceptibly reduced malnutrition.

Table 4

Sub-Saharan Africa: Emergency Food Donations by Foreign Nations

Thousand Metric Tons

	Crop Year (November-October)		
	Grains		Protective Foods[1]
Donor	1972/73	1973/74	1973/74
Total	**525**	**630**	**60**
United States[2]	250	280	35
Western Europe and Canada	205	285	20
Other countries	70	65	5

1. Including oils, soy-fortified grits, and corn-soy milk.
2. Including US donations through the World Food Program and United Nations International Childrens Emergency Fund, as well as direct gifts.

4. No census of casualties has been made.

CONFIDENTIAL
Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

Sub-Saharan Africa: Refugees in Tahoua, Niger, awaiting distribution of food.

Economic Setbacks

11. Because Sahelian agriculture is largely divorced from the monetary economy and characterized by low productivity, the drought's effect on the gross national output of the six Sahelian states was muted, not reflecting the local severity of the disaster. Most citizens living south of the Sahel were able to carry on without severe hardship. Major industries, such as mining uranium in Niger, phosphates in Senegal, and iron ore and copper in Mauritania, were wholly unaffected. Commercial crops – peanuts and cotton – sustained only transient damage. River and lake fishing for food and exports was seriously reduced in Mali, Upper Volta, Niger, and Chad.

12. In the Sahel, the drought killed possibly as many as 15-25 million head, one-third to one-half of the livestock population. Many families lost their entire herds and were forced to exist on food handouts. The losses severely disrupted the only significant intra-Sahel economic intercourse, barter of milk and other livestock products for cereal and pasture.

13. The drop in herd numbers undoubtedly will cut domestic and foreign cattle trade for a number of years. Cattle sold or bartered by the herders supply

CONFIDENTIAL
Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

live beef to butchers in local towns and to traders who export to coastal cities, such as Abidjan, Dakar, and Accra. Curtailment of this trade will cut into domestic meat consumption and export earnings and will force coastal states to rely more heavily on imports of expensive non-African frozen meat. Beef prices in the coastal cities can be expected to rise sharply.

14. The effect on government revenues in the six Sahelian states has been a reduction in yield from the livestock head-tax. That tax had contributed roughly 5% of revenues prior to the drought. Some of the impact of this reduction has been lessened by emergency offsetting budgetary donations from France. Some resources have been diverted from developmental projects to emergency relief.

15. A serious effect of the drought was a temporary quickening of the pace of encroachment of the Sahara Desert into the Sahel. Slow expansion had been progressing for years because of overgrazing. The concentration of livestock on available pasture and, in particular, around water wells and at the edges of the Niger and Senegal Rivers and Lake Chad may have hastened the advance during the drought. Large herds of goats, which ate plant roots and leaves from bushes, and the chopping by herders of branches and trees for firewood and animal fodder contributed to the expansion.

Sub-Saharan Africa: Woodcutting for fuel and fodder quickened erosion.

CONFIDENTIAL
Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

Partial Recovery in 1974

16. Rainfall was poor in June 1974, the first month of the wet season, but increased during July-September throughout most of the area. The rains, however, became too heavy in some places, causing drownings and flooding that damaged crops and housing. The rains washed away roads in Mali and Niger, isolating communities and hampering relief operations.

17. Despite good rainfall, domestic harvests and grain supplies carried over from aid donations in 1974 were short of the Sahelian states' cereal requirements for 1975 by an estimated 300,000-400,000 tons. Seed supplies were minimal at planting time last spring, and many families that had grown subsistence crops had moved to villages and refugee centers. Insect damage was substantial in some areas.

18. Two or three consecutive years of rainfall matching the 1974 total would be required to rebuild drought-baked land inside the Sahel and restore cereal output to adequate levels. The recovery of livestock herds would take substantially longer. Much of the brood stock is aged, reducing both the frequency of birth and the probability that the offspring will survive. The normal recurrence of dry years in the Sahel may limit herds to below the excessive numbers reached in 1968, which had followed an unusual period of seven-eight consecutive years of above-average rainfall.

Possibility of Deteriorating Weather

19. Sahelian weather will continue to be unreliable. At a minimum, droughts of one or more years' duration encompassing individual portions of the Sahel will occur regularly. Whether droughts of the severity, pervasiveness, and duration of the one just past (the first such drought in about 60 years) will recur soon is uncertain.

20. Some weather experts are forecasting the beginning of a long-term cyclical cooling trend in world weather patterns that, if borne out, will increase the frequency of severe drought in the Sahel. The cooling weather would restrict the northerly movement of the subtropical monsoons that discharge Sahelian rainfall. The result would be progressively dryer weather and ultimately a southward advance of the Sahara into the Sahelian region.

21. The realization of this forecast would be disastrous for the six Sahelian countries. The encroachment of Sahara-like weather would snuff out the limited

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

agricultural capability along the rivers and in more southerly regions that are accustomed to higher precipitation, leaving the states without the capability to feed themselves even in good years. The forced southward migration of peoples would increase the likelihood of strife that already occasionally flares between herders seeking pasture and farmers protecting crops. The age-old cultural conflicts between the herders and southern residents would be exacerbated.

22. The uncertainty of the forecast limits its usefulness for economic planning in the Sahel. Whether a cyclical deterioration already has begun and, if it has, how quickly weather will worsen are very much in doubt. The most pessimistic estimate implies a possibility of sharp deterioration during the next 40 years, but others indicate periods of centuries. Lacking firmer information, the Sahelian governments and major aid donors are going ahead on the assumption that weather will not become so overwhelmingly adverse as to rule out reasonable chances for economic development.

Development – An Imposing Challenge

23. One possibly favorable consequence of the drought just past was a disruption of conservative economic and cultural mores that probably had been detrimental to the region's developmental potential. Suddenly bereft of a viable economic occupation, herders were forced to seek wage jobs in southern communities, many outside the six states. Although the desire by most to return to herding is strong, the temporary rupture of old ways and exposure to new opportunities undoubtedly will broaden perspectives. The young in the Sahel may be more strongly inclined to join the growing numbers of West African job seekers in the coastal African cities. Although openings in the cities generally are scarce, such movement could help moderate future population pressures on the Sahel's meager resources.

24. Agricultural development, nevertheless, will remain a prerequisite for improving the living standard in the six Sahelian states. Given the slowness of industrial job growth and continuing population expansion, the proportion of independent farmers and herders in the population is not likely to fall much below 80%-90% in the foreseeable future. Political and social distress caused by the poverty of this overwhelmingly large sector of the population will continue to represent a major motive for development.

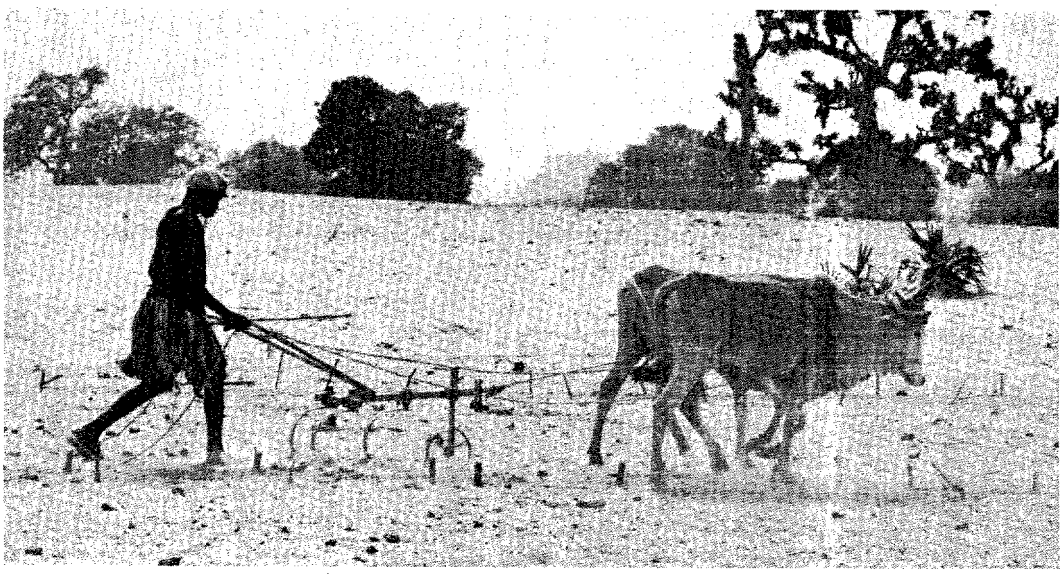
25. The extent of agricultural development that it is practical to expect in the six states is questionable. The wide range of aid-sponsored projects planned

CONFIDENTIAL
Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

and begun as a reaction to the drought undoubtedly will alleviate hardships and help build a framework for economic growth. To go further will require continuing infusions of capital and technical aid and far-reaching changes in the attitudes, habits, and capabilities of the farmers and herders. Carrying through the needed changes will severely test the determination and stability of the Sahelian governments. The magnitude and duration of aid that will be required will strain the generosity and patience of donors.

26. The range of farm products that have a promising commercial potential is very narrow. Only cotton and peanuts have yet been produced successfully on a moderately large scale. Because most of the area of the states is at the extreme margin of the world's cultivable area, few other crops are likely to be competitive with harvests from naturally more productive lands. Even the cultivation of the basic food cereals – sorghum and millet – probably would diminish if the states could afford the alternative of buying higher quality imported cereals.



Sub-Saharan Africa: Plowing barren land in Senegal.

27. The potential for cattle raising appears more promising. Growing beef markets already exist in the coastal African cities, and Sahelian exports probably could be increased substantially by establishing integrated programs of cattle weaning, feeding, and marketing. These could be instituted without disturbing significantly traditional migratory herding patterns. Such programs, however, could not be expected to overcome the likelihood of recurring overgrazing and consequent vulnerability to drought.

28. Existing agricultural development in the six states is small. Veterinary services, watering wells in some areas, and developmental rice farms are the principal

CONFIDENTIAL
Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

projects to improve herding and food production. Expanding food-crop irrigation and increasing the scope and resiliency of livestock feeding are the most pressing needs. Controlling crop and livestock pests and diseases will be mandatory. Adding productive inputs – cultivating equipment, fertilizers, cattle handling facilities, and the like – and introducing improved livestock breeds and crop strains will be required to sustain growth. As development progresses, expanded transportation, marketing, and administrative facilities will be needed to support production.

Crop Irrigation and Livestock Feeding

29. A particularly difficult problem will be to overcome the unreliability, during severe drought, of food crop irrigation and livestock feeding -- the two principal vulnerabilities. Rivers and wells that would provide abundant water during normal years recede drastically when not replenished by the annual rains. Although reliable, very deep wells are prohibitively expensive. Inadequate water for irrigation rules out developing reliable pasture in the northern Sahel. Growing hay or other feed crops farther south or ridding pastures south of the Sahel of disease will be time consuming and expensive.

30. Financing problems and interstate disagreements have long impeded damming the Sahelian rivers for crop irrigation. Although international sympathy because of the 1968-73 drought is spurring financing offers, getting agreement on controlling the flow of the rivers, all of which are common to more than one country, is a continuing problem. At some potential sites, backed-up waters would cross national borders and flood cropland of neighboring countries. Disagreements and a lack of financing have delayed for more than 10 years dams planned for the Senegal and smaller nearby rivers.

31. The potential for small irrigation projects that could be constructed without massive foreign aid is doubtful. Although inexpensive and beneficial in most years, tapping the rivers with small weirs and canals probably would not be reliable during long droughts when the rivers recede. Similarly, many wells that are dug by hand or with ordinary equipment, having maximum depths of about 200-250 feet, become unusable when rainfall is inadequate to replenish the near-surface (phreatic) water table. Most such wells, moreover, are mainly for human and animal needs and do not have the capacity for more than garden-plot crop irrigation.

32. Expanding reliable livestock watering in the northern pasturing areas is costly and complex. Where it exists, underground water that is not influenced by

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

fluctuations in rainfall has generally been found to be at extremely deep levels, often more than 2,000 feet. Well drilling and pumping, therefore, require special equipment and are expensive, costing as much as $200,000 a well for drilling alone.

33. Lack of feed for the herds during long droughts will remain a severe problem until the feeding capability in the south of the six countries is improved. Fencing and rotating grazing, even if politically and technically feasible, could not be expected to insure adequate pasture in the northern Sahel through long and severe droughts. As in the past, most herders probably would be forced to prolong their stay in the dry season pasturing areas of the south. If crop irrigation were established along the rivers, growing and stocking hay or other livestock feed probably could be developed to provide some relief. Competition for land during droughts between herders and crop farmers would be likely to remain an issue.

Sub-Saharan Africa: Pasture stripped completely from land near water.

34. There is hope that tsetse fly eradication programs will expand pasturing south of the Sahel. Slow and inefficient eradication methods, however, complicate the clearing of large enough areas to be of significant benefit to the Sahelian herds. Preventing reinfestation will be a serious problem. Several other livestock diseases – rinderpest, bovine pleuropneumonia, anthrax, blackleg, and others – contribute to the disease problems.

35. Expanding the southern pastures would improve the prospects for upgrading livestock breeds. Long subject to extremely high mortality -- up to 50% by cattle in the first year of life even after veterinary services became available -- the Sahelian herds consist of only the hardiest animals able to withstand long

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

periods with minimal feed and water. Raising more productive breeds that are less durable would require better feeding conditions, probably precluding most pasturing outside of the better-watered areas in the south.

36. Modernizing the handling of cattle may have significant promise for improving livestock productivity. Programs to wean and confine calves as yearlings or less and intensively feed them would more than halve the three to five years presently needed to prepare grass-fed animals for butchering. By using male animals, fattening systems would not upset the herders' reliance on the females for milk and herd growth. Freed of long-term nursing demands, brood cattle would be able to reproduce as often as annually, compared with once every three to four years. Transportation would be needed to move the fattened animals to the urban markets, avoiding the disease risk and weight loss associated with the existing system of trekking the live animals to market.

Institutional Shortcomings

37. Unfortunately, the backwardness of the economy and institutions of the Sahelian states detracts from hope that the physical obstacles to developing agriculture can eventually be overcome. The fact that most of the states' populations produce their own food minimizes the size of the domestic cereal market, limiting incentives for expanded food production. In Mali, government price controls designed to hold down urban food costs have further depressed producers' incentives. Exports do not provide alternative sales outlets because of the undesirability of sorghum and millet in foreign markets. Cereal imports, for example, by Senegal and Mauritania, which have to import substantial quantities even when rainfall is normal, consist largely of rice and wheat, preferred by the urban consumers.

38. Shortcomings in Sahelian policy and administrative capabilities reduce the magnitude and effectiveness of foreign aid. Aid donors are discouraged by vague and incomplete planning and a lack of detailed project proposals. Poor coordination splinters the impact of existing programs and projects. Limited planning skills and disagreement over strategies and goals impede efforts to alleviate these problems. Some of the governments have only recently begun to give priority to the development of cattle raising; this activity most interests many donors because of its plight during the 1968-73 drought and because its potential appears more promising than farming. The governments' old animosities toward the herders and lack of success in enforcing taxing of the herding economy had dampened the interest in livestock development.

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5

39. Ironically, the dominant incentives for livestock herding are likely to stimulate a recurrence of overgrazing. Still existing are the factors that influenced herd numbers in 1968 – the states' objectives of increasing livestock exports, the herders' tradition of using livestock as a store of wealth, and the catalyst of widely available veterinary services. None of the states is devoting broad efforts to determining an optimum grazing capacity for the Sahel or to preparing to limit herds accordingly. Most livestock-related development still is for veterinary services and well drilling. The incentive for controlling numbers provided by the 1968-73 drought will diminish if good rainfall continues during the next few years.

40. Institution of an effective system of controlling herd numbers would be extremely difficult. Carrying out national programs of enumeration and control would be costly, probably exceeding the administrative capability or potential of the Sahelian states. Instituting private land tenure, which would provide automatic incentives to control herds, would require a generation or more of time. To persuade the herders to relinquish the tradition of communal land use and to overcome the very complex problems of dividing and distributing land would be almost prohibitively difficult. Private tenure, moreover, would mean terminating the age-old nomadic way of life, further complicating the change.

41. That commercial institutions and marketing are minimal is an additional impediment to controlling herd numbers. Herders will continue to regard unlimited increases in livestock as a desirable goal until commerce and banking are accepted as an alternative means of earning and storing wealth. These institutions will evolve only very gradually and cannot be expected to help ease the pressure for expanding herds in this decade.

Prospects

42. Recovery to predrought living standards probably can be expected in most of the Sahel during the next several years. A severe Sahel-wide drought probably would not quickly recur unless the forecast of long-term deterioration is realized more abruptly than believed likely. Localized droughts are a certainty, causing intermittent requirements for foreign food donations to individual states. Assistance for nomadic families that lost their entire livestock herds will be needed for several years.

43. Vulnerability to drought will continue to be a problem. The building of granary stockpiles from foreign donations is probable, but domestic production probably will not be developed sufficiently to negate the need for additional

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5
CONFIDENTIAL

donations if another severe drought occurs. Little sentiment is perceived for the institutionalization of interstate sharing of supplies. The prospects for making irrigation and livestock feeding reliable during severe droughts are poor.

44. In time, planned programs to improve livestock feeding and handling and expand areas free of tsetse-borne disease may improve productivity and exports by limited segments of the herding population. For most herders, the continuation of the cycles of contracting herds during dry years and subsequent rebuilding is probable. The chances are poor that rainfall will again be above average for enough consecutive years to permit herds to regain the excessive numbers of the late 1960s.

45. At least the rest of this decade will be needed to establish any perceptible developmental momentum in Sahelian agriculture. Even in the event that financing and technical problems were overcome, completing large irrigation projects that might stimulate wide peripheral development would take years. Progress instead is likely to be irregular, consisting of smaller aid-sponsored projects that will not in themselves stimulate sustained development -- roads, wells, expanded primary education, a beginning on beef fattening and tsetse eradication, and the like. Except possibly for medical and dietary assistance, little perceptible improvement in the standard of living of most of the six states' agricultural populations is likely.

CONFIDENTIAL
Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5

Approved For Release 2000/05/15 : CIA-RDP79T01098A000500020005-5